

# *Research on Gulf War Veterans' Illnesses*

## *Department of Defense*

### *Funding*

| <i>Project #</i> | <i>Title</i>   | <i>Site</i>                                 | <i>Status</i> | <i>FY'94</i> | <i>FY'95</i> | <i>FY'96</i> | <i>FY'97</i> | <i>94-97 Total</i> | <i>Projected<br/>FY'98</i> |
|------------------|--|---|---------------|--------------|--------------|--------------|--------------|--------------------|----------------------------|
| DoD-00A          | DoD/VA Cooperative Funds Set-Aside for Neurobiology of Stress Research - Under Competition   |   | Pending       |              |              |              | \$5,000,000  | \$5,000,000        |                            |
| DoD-00B          | Funds Allocated to Extramural Projects Under Negotiation   |   | Pending       |              |              |              | \$4,839,000  | \$4,839,000        |                            |
| DoD-00C          | 1998 DoD University Research Initiative Set Aside  |   | Pending       |              |              |              |              | \$0                | \$8,000,000                |
| DoD-00D          | 1998 Funds Committed but Currently Unassigned to Projects  |   | Pending       |              |              |              |              | \$0                | \$846,000                  |
| DoD-1            | Epidemiologic Studies of Morbidity Among Gulf War Veterans: A Search for Etiologic Agents and Risk Factors                             | Naval Health Research Center; San Diego, CA | Ongoing       | \$725,000    | \$1,010,000  | \$2,250,000  | \$2,000,000  | \$5,985,000        | \$2,654,000                |
| DoD-1A           | A Study of Symptoms Among 1500 Seabees   | Naval Health Research Center                | Ongoing       |              |              |              |              | \$0                |                            |
| DoD-1B           | A Comparative Study of Hospitalizations among Active Duty Personnel who Participated in the Gulf War and Similar Personnel who did not | Naval Health Research Center                | Ongoing       |              |              |              |              | \$0                |                            |
| DoD-1C           | A comparative study of pregnancy outcomes among gulf war veterans and other active-duty personnel.                                     | Naval Health Research Center                | Ongoing       |              |              |              |              | \$0                |                            |

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|------------------|---|------------------------------|---------------|--------------|--------------|--------------|--------------|--------------------|----------------------------|
| DoD-1D           | Infertility and Miscarriage in Gulf War Veterans  | Naval Health Research Center | Ongoing       |              |              |              |              | \$0                |                            |
| DoD-1E           | Seabee Health Study.  | Naval Health Research Center | Ongoing       |              |              |              |              | \$0                |                            |
| DoD-1F           | A Comparison of Nonfederal Hospitalization Experience Among Veterans in California who have separated from active service: PGW vs. EV.                  | Naval Health Research Center | Ongoing       |              |              |              |              | \$0                |                            |
| DoD-1G           | Prevalence of Congenital Anomalies Among Children of Persian Gulf War Veterans.   | Naval Health Research Center | Ongoing       |              |              |              |              | \$0                |                            |
| DoD-2            | Physiological and Neurobehavioral Effects in Rodents from Exposure to Pyridostigmine, Fuels, and DEET (short title: Toxicity of Simulated PGW Exposure) | Tri-Svc Tox Progr, NMRI-TD   | Ongoing       | \$90,000     | \$0          | \$0          | \$0          | \$90,000           |                            |
| DoD-4            | The General Well-Being of Gulf War Era Service Personnel from the States of Pennsylvania and Hawaii: A Survey   | WRAIR, Wash. DC              | Complete      | \$621,000    | \$688,000    | \$764,000    | \$985,000    | \$3,058,000        |                            |
| DoD-6            | Prevention, Diagnosis, and Treatment of the Effects of Combat Stress  | WRAIR, Washington, DC        | Ongoing       | \$0          | \$60,000     | \$0          | \$0          | \$60,000           |                            |
| DoD-6A           | Combat Stress Pharmacotherapy   | WRAIR, Wash. DC              | Ongoing       |              |              |              |              | \$0                |                            |
| DoD-6B           | Combat Stress Diagnosis, PTSD Prevention  | WRAIR, Wash. DC              | Ongoing       |              |              |              |              | \$0                |                            |
| DoD-7A           | Health Risk Assessment of Embedded Depleted Uranium: Behavior, Physiology, Histology, and Biokinetic Modeling   | AFRRI, Bethesda, MD          | Ongoing       | \$897,000    | \$0          | \$0          | \$0          | \$897,000          | \$0                        |

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|------------------|--|-------------------------------|---------------|--------------|--------------|--------------|--------------|--------------------|----------------------------|
| DoD-7B           | Carcinogenicity of Depleted Uranium Fragments  | Inhal Tox Lab, Albuquerque NM | Ongoing       |              | \$327,000    | \$222,000    | \$222,000    | \$771,000          | \$0                        |
| DoD-8            | Research on Diagnostic Tools for Leishmaniasis   | WRAIR                         | Ongoing       | \$773,000    | \$895,000    | \$652,000    | \$695,000    | \$3,015,000        |                            |
| DoD-8A           | Serologic Diagnosis of Viscerotropic Leishmaniasis (VTL)   | WRAIR, Wash. DC               | Complete      |              |              |              |              | \$0                |                            |
| DoD-8B           | Development of a Leishmania Skin Test Antigen (LSTA)   | WRAIR, Wash. DC               | Ongoing       |              |              |              |              | \$0                |                            |
| DoD-9            | Identification of the Genetic Factors Which Control Tropism in Leishmania                                    | WRAIR, Brazilia               | Ongoing       | \$0          | \$150,000    | \$0          | \$0          | \$150,000          | \$0                        |
| DoD-10           | Pyridostigmine Synergistic Toxicity Study  | CHPPM, Aberdeen MD            | Complete      | \$42,000     | \$44,000     |              |              | \$86,000           |                            |
| DoD-11           | Male/Female Differential Tolerances to Pyridostigmine Bromide  | S.FL Drug Res Miami FL        | Ongoing       | \$549,000    | \$359,000    | \$0          | \$0          | \$908,000          |                            |
| DoD-12           | Forward Deployable Diagnostics for Infectious Diseases   | WRAIR, Wash. DC               | Ongoing       | \$520,000    | \$1,162,000  | \$439,000    | \$932,000    | \$3,053,000        | \$2,000,000                |
| DoD-13           | Effects of Persian Gulf War Service on Military Working Dogs   | AFIP, Wash. DC                | Ongoing       | \$0          | \$0          | \$97,000     | \$165,000    | \$262,000          | \$0                        |
| DoD-14           | Risk Factors Among US Army Soldiers for Enrolling on the Department of Veterans Affairs Gulf War Registry    | WRAIR, Wash. DC               | Ongoing       | \$120,000    | \$0          | \$0          | \$0          | \$120,000          |                            |
| DoD-15           | Comparative Mortality Among US Military Personnel Worldwide During Operations Desert Shield and Desert Storm | WRAIR, Wash. DC               | Complete      | \$20,000     | \$0          |              |              | \$20,000           |                            |

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|------------------|---|-------------------------------------|---------------|--------------|--------------|--------------|--------------|--------------------|----------------------------|
| DoD-16           | Kuwait Oil Fire Health Risk Assessment  | CHPPM, Aberdeen MD                  | Complete      | \$345,000    | \$137,000    | \$50,000     |              | \$532,000          |                            |
| DoD-17           | Retrospective Studies Involving Military Use of Pyridostigmine as a Pretreatment for Nerve Agent Poisoning  | WRAIR, Wash. DC                     | Complete      |              |              |              |              | \$0                |                            |
| DoD-18           | Kuwait Oil Fires Troop Exposure Assessment Model (TEAM)   | CHPPM, Aberdeen MD                  | Complete      | \$68,000     | \$151,000    | \$770,000    | \$0          | \$989,000          | \$2,000,000                |
| DoD-19           | Persian Gulf Veterans Health Tracking System  | CHPPM, Aberdeen MD                  | Ongoing       |              | \$25,000     | \$0          | \$0          | \$25,000           | \$0                        |
| DoD-20           | A Statistical Study Correlating Illnesses in Gulf War Veterans to Battlefield Locations of Afflicted US Army Personnel During the Iraq-Kuwait War; Part 1: Method to Relate Troop Deployment and Illnesses in Gulf War Veterans..." | USAR Lab, APG, MD                   | Complete      | \$50,000     | \$0          |              |              | \$50,000           |                            |
| DoD-21           | Study of Variability In Pyridostigmine Inhibition of Blood Cholinesterases in Healthy Adults and Individuals With Symptoms Following Participation in Operation Desert Storm  | WRAIR, Wash. DC                     | Ongoing       | \$38,000     | \$100,000    | \$0          | \$0          | \$138,000          |                            |
| DoD-22           | Chronic Organophosphorus Exposure and Cognition   | Med Coll of GA Res Inst., Augusta   | Ongoing       | \$375,000    | \$0          | \$0          | \$0          | \$375,000          | \$0                        |
| DoD-23           | Acute and Long-Term Impact of Deployment to Southwest Asia on the Physical and Mental Health of Soldiers and their Families   | WRAIR, Wash. DC                     | Ongoing       |              |              |              |              | \$0                |                            |
| DoD-30           | Epidemiological Studies Persian Gulf War Illnesses, PG Women's Health Linkage Study   | Klemm Analyses Group, Washington DC | Ongoing       |              | \$779,000    | \$0          | \$0          | \$779,000          | \$0                        |

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| DoD-31           | Dysregulation of the Stress Response in the Persian Gulf Syndrome  | Georgetown Univ & VAMC Wash. DC     | Ongoing       |              | \$971,000    | \$0          | \$0          | \$971,000          | \$0                        |
| DoD-32           | Neuropsychological Functioning in Persian Gulf Era Veterans  | VAMC Boston                         | Ongoing       |              | \$353,000    | \$0          | \$0          | \$353,000          | \$0                        |
| DoD-33           | Effects of Pyridostigmine in Flinders Line Rats Differing in Cholinergic Sensitivity   | Univ. NC, Chapel Hill               | Ongoing       |              | \$354,000    | \$0          | \$0          | \$354,000          | \$0                        |
| DoD-34           | Characterization of Emissions from Heaters Burning Leaded Diesel Fuel in Unvented Tents  | USDept. Energy, Albuquerque, NM     | Ongoing       |              | \$283,000    | \$0          | \$0          | \$283,000          | \$0                        |
| DoD-35           | Feasibility of Investigating Whether There is a Relationship Between Birth Defects and Service in the Gulf War.                                | March of Dimes, Sacramento, CA      | Ongoing       |              | \$427,000    | \$10,000     | \$63,000     | \$500,000          | \$0                        |
| DoD-36           | Fatigue in Persian Gulf Syndrome-Physiologic Mechanisms  | Univ. TX, SW                        | Ongoing       |              | \$416,000    | \$138,000    | \$0          | \$554,000          | \$0                        |
| DoD-37           | Neurobehavioral and Immunological Toxicity of Pyridostigmine, Permethrin, and DEET in Male and Female Rats                                     | Univ. FL, Gainesville               | Ongoing       |              | \$934,000    | \$5,000      | \$0          | \$939,000          | \$0                        |
| DoD-38           | Diagnostic Antigens of Leishmania tropica  | Inf. Dis. Res. Instit., Seattle, WA | Ongoing       |              | \$612,000    | \$0          | \$0          | \$612,000          | \$0                        |
| DoD-39           | A Controlled Epidemiological and Clinical Study into the Effect of Gulf War Service on Servicemen and Women of the United Kingdom Armed Forces | King's Coll., UK                    | Ongoing       |              | \$865,000    | \$0          | \$0          | \$865,000          | \$0                        |
| DoD-40           | Psychological and Neurobiological Consequences of the Gulf   | VAMC West Haven, CT                 | Ongoing       |              | \$264,000    | \$0          | \$0          | \$264,000          | \$0                        |

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| DoD-41           | Evaluation of Muscle Function in Persian Gulf Veterans   | Univ. PA                                     | Ongoing       |              | \$906,000    | \$0          | \$0          | \$906,000          | \$0                        |
| DoD-42           | The Symptomatic Persian Gulf Veterans Protocol: An Analysis of Risk Factors with an Immunologic and Neuropsychiatric Assessment  | VAMC Birmingham                              | Ongoing       |              |              | \$700,000    | \$0          | \$700,000          | \$0                        |
| DoD-44           | Investigation of Seminal Plasma Hypersensitivity Reactions   | Univ. Cincinnati MSC                         | Ongoing       |              |              | \$634,000    | \$0          | \$634,000          | \$0                        |
| DoD-45           | Physical and Emotional Health of Gulf War Veterans Women   | Univ. MI, Ann Arbor                          | Ongoing       |              |              | \$100,000    | \$100,000    | \$200,000          | \$0                        |
| DoD-46           | Exploratory Data Analysis with the CCEP Database   | Naval Post-Graduate School, Monterey, CA     | Ongoing       |              |              | \$60,000     | \$100,000    | \$160,000          |                            |
| DoD-47           | Study of Mycoplasmal Infections in Gulf War Veterans   | WRAIR, Wash. DC                              | Ongoing       |              |              | \$112,000    | \$0          | \$112,000          |                            |
| DoD-48           | Assessment of Genomic Instability via Chromosome 7 Inversion Frequency in a Symptomatic Cohort of Gulf War Veterans vs Selected Control Groups                           | WRAIR, Wash. DC                              | Ongoing       |              |              | \$74,000     | \$0          | \$74,000           |                            |
| DoD-49           | Diagnosis and Dosemetry of Exposure to Sulfur Mustard: Development of Standard Operating Procedures and Exploratory Research on Protein Adducts                          | TNO Prins Maruits Lab, Rijswijk, Netherlands | Ongoing       |              |              | \$927,000    | \$0          | \$927,000          | \$0                        |
| DoD-50           | Toxicokinetics of O-Ethyl S-(2-Diisopropylaminoethyl) Methylphosphonothioate [(+)-VX] in Rats, Hairless Guinea Pigs and Marmosets - Identification of Metabolic Pathways | TNO Prins Maruits Lab, Rijswijk, Netherlands | Ongoing       |              |              | \$699,000    | \$0          | \$699,000          | \$0                        |

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| DoD-51           | Transgenic Engineering of Cholinesterases: Tools for Exploring Cholinergic Responses  | Hebrew Univ of Jerusalem, Israel | Ongoing       |              |              | \$864,000    | \$0          | \$864,000          | \$0                        |
| DoD-52           | Female Gender and Other Potential Predictors of Functional Health Status Among Persian Gulf War Veterans  | VAMC Boston                      | Ongoing       | \$414,000    | \$0          | \$0          | \$0          | \$414,000          | \$0                        |
| DoD-53           | Long-Term Effects of Subclinical Exposures to Sarin   | Albuquerque, NM                  | Ongoing       |              |              | \$1,000,000  | \$400,000    | \$1,400,000        | \$0                        |
| DoD-54           | Assessment of Subchronic Neurobehavioral and Neuropathologic Effects in Rats  | Battelle, Columbus, OH           | Ongoing       |              |              | \$315,000    | \$100,000    | \$415,000          | \$0                        |
| DoD-55           | Low-Level Exposure to GB Vapor in Air: Diagnosis/Dosimetry, Lowest Observable Effect Levels, Performance-Incapacitation, and Possible Delayed Effects | Prinz Maurits Lab, Netherlands   | Ongoing       |              |              | \$500,000    | \$136,000    | \$636,000          | \$0                        |
| DoD-56           | Low-Level Sarin Neurotoxicity and Its Modulation by Pyridostigmine  | U of CA                          | Ongoing       |              |              | \$685,000    | \$100,000    | \$785,000          | \$0                        |
| DoD-57           | Physiologic Effects of Stress in Gulf War Veterans  | Georgetown Univ., Wash DC        | Ongoing       |              |              |              | \$909,000    | \$909,000          | \$0                        |
| DoD-58           | Illness Among Persian Gulf War Veterans: Case Validation Studies  | Univ of Iowa                     | Ongoing       |              |              |              | \$2,208,000  | \$2,208,000        | \$0                        |
| DoD-59           | Pyridostigmine-induced Neurodegeneration: Role of neuronal Apoptosis  | Purdue Res Foundation            | Ongoing       |              |              |              | \$625,000    | \$625,000          | \$0                        |
| DoD-60           | Butyrylcholinesterase Genetic Variants in Persons with Gulf War Illness   | Univ of Nebraska                 | Ongoing       |              |              |              | \$125,000    | \$125,000          | \$0                        |

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|--------------------|--|-------------------------------|---------------|--------------|--------------|--------------|--------------|--------------------|----------------------------|
| DoD-61             | Neurophysiologic and Neuropathologic Effects in Monkeys of Low Level Exposures to Sarin, Pyridostigmine, Pesticides, and Botulinum Toxoid          | Battelle Columbus             | Ongoing       |              |              |              | \$1,586,000  | \$1,586,000        | \$0                        |
| DoD-62             | Sarin and Pyridostigmine Interaction under Physical Stress: Neurotoxic Effects in Mice   | S. Ill Univer                 | Ongoing       |              |              |              | \$201,000    | \$201,000          | \$0                        |
| DoD-63             | PGW Veterans: Epidemiological and Clinical Evidence for Residual Organophosphate Neurotoxicity   | Oregon Health Sciences Univ   | Ongoing       |              |              |              | \$1,626,000  | \$1,626,000        | \$0                        |
| DoD-64             | Individual Differences in Neurobehavioral Effects of Pyridostigmine  | Midwest Res Institute         | Ongoing       |              |              |              | \$1,900,000  | \$1,900,000        | \$0                        |
| DoD-65             | Antibacterial Treatment Method Based Upon the Excretion of Dead and Decaying Spherical Bacteria  | Truro Clinic, New Orleans, LA | Ongoing       |              |              | \$0          | \$3,400,000  | \$3,400,000        | \$0                        |
| DoD-66             | Testing for Mycoplasma Infection: Criterion Validity and Replicability of Nucleoprotein Gene Tracking and Forensic Polymerase Chain Reaction Tests | WRAIR, Wash. DC               | Pending       |              |              |              | \$150,000    | \$150,000          | \$0                        |
| DoD-67             | Multi-Disciplinary Pathophysiologic Studies of Neurotoxic Gulf War-Related Neurologic Syndromes  | UT Southwest Medical Center   | Pending       |              |              |              | \$3,000,000  | \$3,000,000        | \$0                        |
| DoD-69             | Five Year Follow-Up of Army Personnel Potentially Exposed to Chemical Warfare Agents   | Medical Follow-Up Agency      | Pending       |              |              |              |              | \$0                |                            |
| <b>Total Funds</b> |  |                               |               | \$5,647,000  | \$12,272,000 | \$12,067,000 | \$31,567,000 | \$61,553,000       | \$15,500,000               |

# *Research on Gulf War Veterans' Illnesses*

*Department of Health and Human Services*

## *Funding*

| <i>Project #</i>          | <i>Title</i>  | <i>Site</i>                         | <i>Status</i> | <i>FY'94</i> | <i>FY'95</i> | <i>FY'96</i> | <i>FY'97</i> | <i>94-97 Total</i> | <i>Projected<br/>FY'98</i> |
|---------------------------|---|-------------------------------------|---------------|--------------|--------------|--------------|--------------|--------------------|----------------------------|
| HHS-1                     | Health Assessment of Persian Gulf War Veterans from Iowa  | CDC and state of IA                 | Ongoing       |              | \$1,764,782  | \$1,616,755  | \$0          | \$3,381,537        | \$0                        |
| HHS-2                     | Disease Cluster in a Pennsylvania Air National Guard Unit, EPI-AID 95-18  | CDC and states of PA & FL           | Ongoing       |              | \$750,000    | \$0          | \$0          | \$750,000          | \$0                        |
| HHS-3                     | Biomarkers of Susceptibility and Polycyclic Aromatic Hydrocarbon (PAH) Exposure in Urine and blood Cell DNA from U.S. Army Soldiers Exposed to Kuwaiti Oil Well Fires | NIH/NCI/DCE/LCTP/IVP                | Complete      | \$0          | \$0          | \$0          | \$0          | \$0                |                            |
| HHS-4                     | Suspected Increase of Birth Defects and health Problems Among Children Born to Persian Gulf War Veterans In Mississippi   | CDC, Jackson, MS                    | Complete      | \$0          | \$0          |              |              | \$0                |                            |
| HHS-5                     | Cognitive Function and Symptom Patterns in Gulf War Veterans  | Boston Univ School of Public Health | Ongoing       |              |              |              |              | \$0                | \$600,000                  |
| HHS-6                     | Defining Gulf War Illness   | UMDNJ/RWJ/EOHSI                     | Ongoing       |              |              |              |              | \$0                | \$600,000                  |
| <b><i>Total Costs</i></b> |   |                                     |               | \$0          | \$2,514,782  | \$1,616,755  | \$0          | \$4,131,537        | \$1,200,000                |

# *Research on Gulf War Veterans' Illnesses*

## *Department of Veterans Affairs*

### *Funding*

| <i>Project #</i> | <i>Title</i>   | <i>Site</i>   | <i>Status</i> | <i>FY'94</i> | <i>FY'95</i> | <i>FY'96</i> | <i>FY'97</i> | <i>94-97 Total</i> | <i>Projected FY'98</i> |
|------------------|--|---|---------------|--------------|--------------|--------------|--------------|--------------------|------------------------|
| VA-1             | VA Mortality Study and VA National Health Survey of Persian Gulf Veterans (94-97 for both); VA Mortality Study ( 98 alone) | VAMC Washington DC  | Ongoing       | \$546,000    | \$340,000    | \$1,980,000  | \$440,032    | \$3,306,032        | \$178,197              |
| VA-2             | VA National Survey of Persian Gulf Veterans  |   | Ongoing       |              |              |              |              | \$0                |                        |
| VA-2A            | VA National Survey of Persian Gulf Veterans - Phase I  | VAMC Washington DC  | Ongoing       |              |              |              |              | \$0                | \$18,111               |
| VA-2B            | VA National Survey of Persian Gulf Veterans - Phase II   | Washington, DC  | Ongoing       |              |              |              |              | \$0                | \$246,551              |
| VA-2C            | VA National Survey of Persian Gulf Veterans - Phase III  | Hines VAMC<br>Cooperative Studies<br>Coordinating<br>Centers/Multiple Sites | Ongoing       |              |              |              |              | \$0                | \$7,878,039            |
| VA-3             | Use of Roster of Veterans Who Served in Persian Gulf Area  | VAMC Washington DC  | Complete      |              |              |              |              | \$0                |                        |
| VA-4             | Boston Environmental Hazards Research Center   | Boston VAMC   | Ongoing       | \$50,000     | \$500,000    | \$500,000    | \$500,000    | \$1,550,000        | \$500,000              |
| VA-4A            | Evaluation of Cognitive Functioning of Persian Gulf Veterans   | VAMC Boston   | Ongoing       |              |              |              |              | \$0                |                        |
| VA-4B            | Evaluation of Neurological Functioning in Persian Gulf Veterans  | VAMC Boston   | Ongoing       |              |              |              |              | \$0                |                        |
| VA-4C            | Gulf War And Vietnam Veterans Cancer Incidence Surveillance  | VAMC Boston   | Ongoing       |              |              |              |              | \$0                |                        |

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| VA-4COR          | Boston Environmental Hazards Research Center - Core   |                  | Ongoing       |              |              |              |              | \$0                |                            |
| VA-4D            | Evaluation of Respiratory Dysfunction Among Gulf War Veterans   | VAMC Boston      | Ongoing       |              |              |              |              | \$0                |                            |
| VA-4E            | The Aromatic Hydrocarbon Receptor (AhR) as a Biomarker of Susceptibility                                | VAMC Boston      | Ongoing       |              |              |              |              | \$0                |                            |
| VA-4F            | Validity of Computerized Tests  | VAMC Boston      | Ongoing       |              |              |              |              | \$0                |                            |
| VA-5             | East Orange Environmental Hazards Research Center   | East Orange VAMC | Ongoing       | \$50,000     | \$500,000    | \$500,000    | \$500,000    | \$1,550,000        | \$500,000                  |
| VA-5A            | Health and Exposure Survey of Persian Gulf Veterans   | VAMC East Orange | Ongoing       |              |              |              |              | \$0                |                            |
| VA-5B            | Physiological and Psychological Assessments of Persian Gulf Veterans                                    | VAMC East Orange | Ongoing       |              |              |              |              | \$0                |                            |
| VA-5C            | Effects of Exertion and Chemical Stress on Persian Gulf Veterans  | VAMC East Orange | Ongoing       |              |              |              |              | \$0                |                            |
| VA-5COR          | East Orange Environmental Hazards Research Center - Core  |                  | Ongoing       |              |              |              |              | \$0                |                            |
| VA-5D            | Effects of Genetics and Stress on Responses to Environmental Toxins                                     | VAMC East Orange | Ongoing       |              |              |              |              | \$0                |                            |
| VA-6             | Portland Environmental Hazards Research Center: Environment, Veterans Health and the Gulf War Syndrome. | VAMC Portland    | Ongoing       | \$50,000     | \$500,000    | \$500,000    | \$500,000    | \$1,550,000        | \$500,000                  |

| <i>Project #</i> | <i>Title</i>  | <i>Site</i>        | <i>Status</i> | <i>FY'94</i> | <i>FY'95</i> | <i>FY'96</i> | <i>FY'97</i> | <i>94-97 Total</i> | <i>Projected<br/>FY'98</i> |
|------------------|---|--------------------|---------------|--------------|--------------|--------------|--------------|--------------------|----------------------------|
| VA-6A            | Psychosocial, Neuropsychological and Neurobehavioral Assessment (Project I)   | VAMC Portland      | Ongoing       |              |              |              |              | \$0                |                            |
| VA-6B            | Clinical and Neuroendocrine Aspects of Fibromyalgia (Project II)  | VAMC Portland      | Ongoing       |              |              |              |              | \$0                |                            |
| VA-6C            | Neurotoxicity of Environmental Pollutants and Warfare Agents (Project III)  | VAMC Portland      | Ongoing       |              |              |              |              | \$0                |                            |
| VA-6COR          | Core: Portland Environmental Hazards Research Center: Environment, Veterans Health and the Gulf War Syndrome. Core Project for Clinical and Epidemiology Research | VAMC Portland      | Ongoing       |              |              |              |              | \$0                |                            |
| VA-6D            | DNA Damage from Chemical Agents and Its Repair (Project IV)   | VAMC Portland      | Ongoing       |              |              |              |              | \$0                |                            |
| VA-6E            | Clinical and Epidemiology Leishmania Research   | VAMC Portland      | Ongoing       |              |              |              |              | \$0                |                            |
| VA-7             | Desert Storm Reunion Survey   | VAMC Boston        | Complete      | \$0          | \$50,000     |              |              | \$50,000           |                            |
| VA-8             | Psychological Test Data of Gulf War Veterans Over Time  | VAMC Mountain Home | Ongoing       | \$0          | \$0          | \$0          | \$0          | \$0                | \$0                        |
| VA-9             | Evaluation of Cognitive Functioning in Persian Gulf War Veterans Reporting War-related Health Problems  | VAMC New Orleans   | Complete      | \$0          | \$0          | \$20,000     |              | \$20,000           |                            |
| VA-10            | Memory and Attention in PTSD  | VAMC New Orleans   | Ongoing       | \$0          | \$0          | \$63,700     | \$57,000     | \$120,700          | \$57,600                   |
| VA-11            | Neuropsychological  | VAMC New Orleans   | Complete      | \$0          | \$0          |              |              | \$0                |                            |

Functioning in Veterans

| <i>Project #</i> | <i>Title</i>   | <i>Site</i>      | <i>Status</i> | <i>FY'94</i> | <i>FY'95</i> | <i>FY'96</i> | <i>FY'97</i> | <i>94-97 Total</i> | <i>Projected<br/>FY'98</i> |
|------------------|--|------------------|---------------|--------------|--------------|--------------|--------------|--------------------|----------------------------|
| VA-12            | Psychological Assessment of Operation Desert Storm Returnees                       | VAMC New Orleans | Complete      | \$0          | \$0          | \$0          | \$0          | \$0                |                            |
| VA-13            | Neurobehavioral Aspects of Persian Gulf Experiences: A Pilot Study                 | VAMC Pittsburgh  | Complete      | \$0          | \$50,000     |              |              | \$50,000           |                            |
| VA-15            | Vaccine-Mediated Immunity Against Leishmaniasis                                    | VAMC Cleveland   | Ongoing       | \$64,300     | \$64,300     | \$0          | \$82,600     | \$211,200          | \$80,000                   |
| VA-16            | Protective Immunity in Experimental Visceral Leishmaniasis                         | VAMC San Antonio | Ongoing       |              | \$60,200     | \$60,700     | \$54,900     | \$175,800          |                            |
| VA-17            | Immunological Evaluation of Persian Gulf Veterans                                  | VAMC Birmingham  | Complete      | \$0          | \$0          |              |              |                    | \$0                        |
| VA-18            | Chronic Gastrointestinal Illness in Persian Gulf Veterans                          | VAMC Boston      | Complete      |              | \$0          | \$0          |              |                    | \$0                        |
| VA-20            | Psychological Adjustment in Operation Desert Shield/Storm Veterans                 | VAMC Gainesville | Complete      |              |              |              |              |                    | \$0                        |
| VA-21            | A Comparison of PTSD Symptomatology among Three Army Medical Units Involved in ODS | VAMC Phoenix     | Complete      | \$0          | \$0          |              |              |                    | \$0                        |
| VA-36            | Stress Symptoms and Their Causal Attribution in Desert Storm Veterans              | VAMC Clarksburg  | Complete      |              | \$0          | \$0          | \$0          |                    | \$0                        |
| VA-40            | Musculoskeletal Symptoms in Gulf War Syndrome                                      | VAMC Long Beach  | Ongoing       | \$0          | \$0          | \$0          | \$0          | \$0                | \$0                        |
| VA-46            | Diarrhea in Persian Gulf Veterans: An Irritable Bowel-Like Disorder                | VAMC Gainesville | Ongoing       |              | \$0          | \$0          | \$0          |                    | \$0                        |
| VA-47            | Retrospective Verification of Mustard Gas Exposure                                 | VAMC Louisville  | Ongoing       |              |              |              | \$37,300     | \$37,300           | \$37,300                   |

| <i>Project #</i>          | <i>Title</i>   | <i>Site</i>                 | <i>Status</i> | <i>FY'94</i> | <i>FY'95</i> | <i>FY'96</i> | <i>FY'97</i> | <i>94-97 Total</i> | <i>Projected<br/>FY'98</i> |
|---------------------------|--|-----------------------------|---------------|--------------|--------------|--------------|--------------|--------------------|----------------------------|
| VA-48                     | Cross-Sensitization as a CNS Model for Gulf War Chemical Intolerance | VAMC Tuscon                 | Ongoing       |              |              |              |              | \$0                | \$44,000                   |
| VA-49                     | Sensitivity to Pyridostigmine Bromide: Persistent Neural Dysfunction | VAMC East Orange            | Ongoing       |              |              |              |              | \$0                | \$184,400                  |
| VA-50                     | Neuropsychological Function in Gulf War Veterans                     | VAMC Detroit                | Complete      |              | \$0          | \$0          | \$0          | \$0                |                            |
| VA-51                     | PTSD and Symptoms in Gulf War Veterans                               | VAMC Cincinnati             | Ongoing       |              | \$0          | \$0          | \$0          | \$0                |                            |
| VA-53                     | Spouses and Children Program   | Denver VAMC/Multiples Sites | Ongoing       |              |              | \$1,000,000  | \$0          | \$1,000,000        | \$1,000,000                |
| <b><i>Total Funds</i></b> |  |                             |               | \$760,300    | \$2,064,500  | \$4,624,400  | \$2,171,832  | \$9,621,032        | \$11,224,198               |

# *Research on Gulf War Veterans' Illnesses*

## *VA/DoD Projects*

### *Funding*

| <i>Project #</i>   | <i>Title</i>   | <i>Site</i>  | <i>Status</i> | <i>FY'94</i> | <i>FY'95</i> | <i>FY'96</i> | <i>FY'97</i> | <i>94-97 Total</i> | <i>Projected<br/>FY'98</i> |
|--------------------|--|--|---------------|--------------|--------------|--------------|--------------|--------------------|----------------------------|
| VA/DoD-1D          | VA/DoD Multi-Site Treatment Trial for Chronic Fatigue Syndrome and Fibromyalgia in Gulf War Veterans | West Haven VAMC Cooperative Studies Coordinating Center/Multiple Sites | Pending       |              |              |              |              | \$0                | \$4,500,000                |
| VA/DoD-1V          | VA/DoD Multi-Site Treatment Trial for Chronic Fatigue Syndrome and Fibromyalgia in Gulf War Veterans | West Haven VAMC Cooperative Studies Coordinating Center/Multiple Sites | Pending       |              |              |              |              | \$0                | \$5,000,000                |
| VA/DoD-2D          | VA/DoD Core Funding of the Medical Follow-Up Agency  | Medical Follow-Up Agency/Institute of Medicine                         | Ongoing       | \$250,000    | \$250,000    | \$250,000    | \$250,000    | \$1,000,000        | \$250,000                  |
| VA/DoD-2DA         | Follow-Up Investigation of Troops Exposed to Nerve Agents at Aberdeen Proving Ground                 | Medical Follow-Up Agency/Institute of Medicine                         | Pending       |              |              |              |              | \$0                |                            |
| VA/DoD-2DB         | Patterns of Pre-Persian Gulf War Illness and Health Care Seeking                                     |  | Ongoing       |              |              |              |              | \$0                |                            |
| VA/DoD-2V          | VA/DoD Core Funding of the Medical Follow-Up Agency  | Medical Follow-Up Agency/Institute of Medicine                         | Ongoing       | \$250,000    | \$250,000    | \$250,000    | \$250,000    | \$1,000,000        | \$250,000                  |
| VA/DoD-2VA         | Follow-Up Investigation of Troops Exposed to Nerve Agents at Aberdeen Proving Ground                 |  | Pending       |              |              |              |              | \$0                |                            |
| VA/DoD-2VB         | Patterns of Pre-Persian Gulf War Illness and Health Care Seeking                                     |  |               |              |              |              |              | \$0                |                            |
| <b>Total Funds</b> |  |  |               | \$500,000    | \$500,000    | \$500,000    | \$500,000    | \$2,000,000        | \$10,000,000               |

